

**Quiz Six**

Show all of your work, and justify your answers. Answers without work or justification will not receive full credit. You may not use notes or calculators on any part of the quiz.

(8 points) Find  $\mathbf{T}$ ,  $\mathbf{N}$ , and  $\mathbf{B}$  for the function

$$\mathbf{r}(t) = \left\langle t^2, \frac{2}{3}t^3, t \right\rangle$$

at the point  $(1, \frac{2}{3}, 1)$ .

(2 points) Find the curvature at that same point.